

Claims

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1. A computer system comprising a CPU which services a plurality of peripheral devices, the CPU having a scheduling controller which includes (a) priority setting means associated with each of the devices for setting a selected priority level in device status register means; and (b) round robin register means having marker means for selecting the next device to be serviced by the CPU, and means for advancing the marker in the round robin register means to the next device at the highest priority level in said device status register means; characterised in that said peripheral devices each have respective priority setting means which set the priority level for that device depending on the urgency with which that device requires servicing.
  2. A system according to claim 1, wherein a separate register is provided for each priority level in the respective device status register means, and a corresponding round robin register is provided in the round robin register means for each device status register, each round robin register containing a single bit; the system further including priority determining means for identifying the highest priority level device status register with at least one bit set; and means in the marker advancing means for advancing the marker in the round robin register means at the highest active priority level.
  3. A system according to either previous claim, wherein different devices have different sets of priority levels.
  4. A system according to Claim 3, wherein the devices are communication devices containing buffers and the priority level signals are determined by the state of occupancy of their buffers.
  5. A system according to claim 4, wherein some devices which receive data at a higher rate, or have a smaller buffer may switch to a higher priority level at

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10

lower levels of buffer occupancy (or emptiness in the case of an output device) than others.

6. A system according to claim 4 or 5, wherein when a device produces a signal of the appropriate priority level, it may produce signals of lower priority level.

7. A system according to any preceding claim, wherein lock-out of the devices is prevented by raising the device priority as servicing becomes more urgent, and once all devices at the highest active priority level are fully serviced, the priority level is dropped to a lower level, and servicing of devices at that level recommences; servicing of devices at the new lower level recommencing at a point where it was left off when a higher priority level up became active.

8. A system according to any preceding claim, wherein the system includes means for allocating more system resources to the CPU in response to detection that one or more devices are becoming in need of urgent servicing.

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